REMARKS

In this Response, Applicants amend claims 8, 15, 20, 26, 33, 40, and 45. No new matter has been added.

Claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47, 52-67, and 77-87 are currently pending, of which claims 8, 15, 20, 26, 33, 40, and 45 are independent. Applicants respectfully submit that all of the pending claims are in condition for allowance.

Applicants thank the Examiner for the courtesy of an interview on October 14, 2009.

I. Claim Rejection under 35 U.S.C. § 101

Claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47, 52-67, and 77-87 are rejected under 35 U.S.C. § 101 as being drawn to non-statutory subject matter (Office Action, page 2). Applicants respectfully traverse the 35 U.S.C. § 101 rejection of claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47, 52-67, and 77-87 as set forth below.

The Examiner raises two objections to the claims. First, the Examiner asserts that the claimed methods are not tied to a particular apparatus or machine. The Examiner indicated during the October 14, 2009 interview that this objection could be overcome by amending the process claims to recite a "suitably programmed computer" (October 19, 2009 Interview Summary at Continuation Sheet, second sentence). Accordingly, Applicants amend independent method claims 8, 20, 33, and 45 to recite a "suitably programmed computer."

The Examiner's second objection is that the claims do not produce a useful, concrete, and tangible result. More specifically, the Examiner indicates, at page 5 of the Office Action, that "the claims do not produce a tangible result because the final result is not used or made available to be used by a user." Accordingly, Applicants amend the claims to recite displaying the final result to a user.

In light of the above, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 101 rejection of claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47, 52-67, and 77-87.

III. Claim Rejection under 35 U.S.C. § 112, First Paragraph

Claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47, 52-67, and 77-87 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement (Office Action, page 6). Applicants respectfully traverse the 35 U.S.C. § 112, first paragraph, rejection of claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47, 52-67, and 77-87 as set forth below.

The Examiner asserts that the recitation of "a first set of data representing a first state of a plurality of chemical substances and the first set of data is transformed to a second set representing a second state of the plurality of chemical substances in the modeled process" in claims 8 and 20 are not adequately described in the application (Office Action, page 6). More specifically the Examiner indicates that no adequate description of the process of "transforming" the first set of data into a second set of data exists in the specification. Applicants respectfully disagree.

As recited in the claims, *the first set of data represents a first state of the plurality of chemical substances,* and further the first set of data *is transformed to a second set representing a second state of the plurality of chemical substances in the modeled process.*

At page 25, line 30, the specification notes that the "state" of the system changes over time "as a numerical representation of the dynamically changing configuration of the system." A description of the transformation process can be found at page 33, line 23, through page 34, line 7. Specifically, the putative time for each chemical reaction in the model may be calculated, and then the times may be sorted into a state array. In one embodiment, the state array is an array of pointers sorted by occurrence time, each pointer pointing to an object to be executed at a particular point in time in the model simulation. Once sorted, the object identified by the first entry in the array is executed (e.g., a first chemical reaction is carried out). The initial state of the system is one example of a first set of data that represents a first state of the plurality of chemical substances, as noted at page 33, last paragraph. As further noted in the last paragraph of pate 33, executing the first reaction may transform the number of species (e.g., the plurality of chemical substances), which places the system in a new state represented by a second set of chemical substances.

The Examiner also asserts that the recitation of "the textual user interface allowing a user to create a script that automatically edits the constructed model" is not adequately described in the application (Office Action, page 6). While Applicants respectfully disagree, and note that Applicants previously cited page 16, lines 13-14 of the Specification for support, the cited claim language has been removed in the present amendment for clarity. Accordingly, Applicants respectfully submit that the §112 rejection regarding the cited script is moot.

Accordingly, Applicants respectfully request reconsideration of the 35 U.S.C. § 101 rejection of claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47, 52-67, and 77-87.

IV. Claim Rejection under 35 U.S.C. § 103(a)

Claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47, 52-67 and 77-87 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kelly (Office Action, page 9). Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47, 52-67 and 77-87 as set forth below.

A. Independent Claims 8, 15, 20, 26, 33, 40, and 45

While Applicants note that several of the claim features have not been substantively considered by the Examiner in the Office Action (e.g., the claim features of "the textual user interface allowing a user to create a script that automatically edits the constructed model" and "wherein the textual user interface automatically prompts a second user input in response to a first user input received through the graphical user interface"), Applicants discussed these features with the Examiner during the October 14, 2009 interview. At that time, the Examiner clarified that he considers these features to be obvious additions to the Kelly reference. While Applicants respectfully disagree, Applicants have amended the independent claims herein to expedite prosecution.

Specifically, the independent claims are amended to recite: that *the constructed model has a layered hierarchy comprising a plurality of hierarchical levels, at least one hierarchical level formed by creating at least one subsystem in the constructed model, each subsystem formed by representing a plurality of blocks of the model as a single block in the constructed model*; and *presenting each hierarchical level in a separate window in the graphical user interface*. Support

for these amendments can be found throughout the Application as originally filed, and more specifically at page 16, lines 13-18 and page 21, line 12 through page 22, line 6.3

As noted at pages 16 and 21 of the present Specification, the above-quoted features allow a user to create subsystems in the constructed model, thereby creating a layered hierarchy. The use of subsystems and layered hierarchies allows components of the model to be layered and nested, thereby facilitating the design and modification of large and complex dynamic systems.

Applicants respectfully submit that Kelly is entirely silent with respect to the above-quoted features of independent claims 8, 15, 20, 26, 33, 40, and 45. Kelly is directed to the mathematical formulae underpinning an adaptive immune response, and is not concerned with the way hierarchies, subsystems, and blocks are represented or displayed. Indeed, Kelly does not appear to mention hierarchies or subsystems at all.

Accordingly, Kelly does not disclose or suggest at least: *the constructed model has a layered hierarchy comprising a plurality of hierarchical levels, at least one hierarchical level formed by creating at least one subsystem in the constructed model, each subsystem formed by representing a plurality of blocks of the model as a single block in the constructed model*; and *presenting each hierarchical level in a separate window in the graphical user interface*, as recited in independent claims 8, 15, 20, 26, 33, 40, and 45. In light of the above, Applicants respectfully request that the 35 U.S.C. §103(a) rejections of claims 8, 15, 20, 26, 33, 40, and 45 be reconsidered and withdrawn.

B. Claims 9-12 and 52-63

Claims 9-12 and 52-63 depend from independent claim 8 and, as such, incorporate all of the features of claim 8. For at least the reasons set forth above in connection with claim 8, Applicants respectfully submit that Kelly fails to disclose or suggest each and every feature of claims 9-12 and 52-63. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 9-12 and 52-63.

C. Claims 16-18

Claims 16-18 depend from independent claim 15 and, as such, incorporate all of the features of claim 15. For at least the reasons set forth above in connection with claim 15, Applicants respectfully submit that Kelly fails to disclose or suggest each and every feature of claims 16-18. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 16-18.

D. Claim 22

Claim 22 depends from independent claim 20 and, as such, incorporates all of the features of claim 20. For at least the reasons set forth above in connection with claim 20, Applicants respectfully submit that Kelly fails to disclose or suggest each and every feature of claim 22. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claim 22.

E. Claims 27-30 and 64-67

Claims 27-30 and 64-67 depend from independent claim 26 and, as such, incorporate all of the features of claim 26. For at least the reasons set forth above in connection with claim 26, Applicants respectfully submit that Kelly fails to disclose or suggest each and every feature of claims 27-30 and 64-67. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 27-30 and 64-67.

F. Claims 34-37

Claims 34-37 depend from independent claim 33 and, as such, incorporate all of the features of claim 33. For at least the reasons set forth above in connection with claim 33, Applicants respectfully submit that Kelly fails to disclose or suggest each and every feature of claims 34-37. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 34-37.

G. Claims 41-43 and 77-87

Claims 41-43 and 77-87 depend from independent claim 40 and, as such, incorporate all of the features of claim 40. For at least the reasons set forth above in connection with claim 40, Applicants respectfully submit that Kelly fails to disclose or suggest each and every feature of

claims 41-43 and 77-87. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 41-43 and 77-87.

H. Claim 47

Claim 47 depends from independent claim 45 and, as such, incorporates all of the features of claim 45. For at least the reasons set forth above in connection with claim 45, Applicants respectfully submit that Kelly fails to disclose or suggest each and every feature of claim 47. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claim 47.

CONCLUSION

In view of the above remarks, Applicants believe that the pending application is in condition for allowance and urges the Examiner to pass the claims to allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicants' attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. MWS-108RCE3. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. § 1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

Dated: January 4, 2010

Respectfully submitted,

Electronic Signature: /Kevin J. Canning/
Kevin J. Canning
Registration No.: 35,470
LAHIVE & COCKFIELD, LLP
One Post Office Square
Boston, Massachusetts 02109-2127
(617) 227-7400
(617) 742-4214 (Fax)
Attorney/Agent For Applicant